

IN THE CLAIMS:

Please amend Claim 3-9, 13-16, and 19-26, as follows.

1. (Canceled)

2. (Canceled)

3. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.45 for the d-line and a second material having an Abbe number of not more than 25, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said second material comprises particles having ~~the~~ a grain size in the range of 2 to 100 nm.

4. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.45 for the d-line and a second material having an Abbe number of not more than 25, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said first material is an amorphous fluororesin.

5. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.45 for the d-line and a second material having an Abbe number of not more than 25, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said second material is particles of a composite metal oxide of titanium and silicon ( $\text{Si}_x\text{-Ti}_{(1-x)}\text{O}_2$ ) having an Abbe number ( $v_d$ ) of 24.4.

6. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.45 for the d-line and a second material having an Abbe number of not more than 25, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said first material is an amorphous fluororesin, said second material is particles of a composite metal oxide of titanium and silicon ( $\text{Si}_x\text{-Ti}_{(1-x)}\text{O}_2$ ) having an

Abbe number ( $v_d$ ) of 24.4, and a weight ratio of said particles and said amorphous fluororesin is in the range of 45:100 to 75:100.

7. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.45 for the d-line and a second material having an Abbe number of not more than 25, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said first material is a dimethylsilicone resin.

8. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.45 for the d-line and a second material having an Abbe number of not more than 25, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

where said second material comprises particles of titanium oxide ( $\text{TiO}_2$ ).

9. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.45 for the

d-line and a second material having an Abbe number of not more than 25, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said first material is a dimethylsilicone resin, said second material is particles of titanium oxide ( $\text{TiO}_2$ ), and a weight ration of said titanium oxide and said dimethylsilicone resin is in the range of 18:100 to 70:100.

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.40 for the d-line and a second material having an Abbe number of not more than 15, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -0.01 v_d + 1.70,$$

wherein said second material comprises particles having a grain size in the range of 2 to 100 nm.

14. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.40 for the d-line and a second material having an Abbe number of not more than 15, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -0.01v_d + 1.70,$$

wherein said first material comprises an amorphous fluororesin.

15. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.40 for the d-line and a second material having an Abbe number of not more than 15, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -0.01v_d + 1.70,$$

wherein said second material comprises particles of titanium oxide ( $\text{TiO}_2$ ).

16. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index of not more than 1.40 for the

d-line and a second material having an Abbe number of not more than 15, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -0.01 v_d + 1.70,$$

wherein said first material is an amorphous fluororesin, said second material is particles of titanium oxide ( $\text{TiO}_2$ ), and a weight ratio of said titanium oxide and said amorphous fluororesin is in the range of 7:100 to 90:100.

17. (Canceled)

18. (Canceled)

19. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index for the d-line in the range of 1.45 to 1.55, both inclusive, and a second material having an Abbe number of not more than 10, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said second material comprises particles having a grain size in the range of 2 to 100 nm.

20. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index for the d-line in the range of 1.45 to 1.55, both inclusive, and a second material having an Abbe number of not more than 10, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said second material is ITO (indium-tin-oxide).

21. (Currently Amended) An optical material which is a mixture of materials comprising a first material having a refractive index for the d-line in the range of 1.45 to 1.55, both inclusive, and a second material having an Abbe number of not more than 10, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said first material is polymethyl methacrylate.

22. (Previously Amended) An optical material which is a mixture of materials comprising a first material having a refractive index for the d-line in the range of 1.45 to 1.55, both inclusive, and a second material having an Abbe number of not more than 10, wherein, with a predetermined ratio of mixture of said first material and second

material, a relation between a refractive index for the d-line ( $n_d$ ) of said first material and an Abbe number ( $v_d$ ) of said second material is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said first material is polymethyl methacrylate, said second material is particles of ITO (indium-tin-oxide), and a weight ratio of said particles and said polymethyl methacrylate is in the range of 30:100 to 250:100.

23. (Previously Amended) An optical material which is a mixture of materials comprising a first material having a refractive index for the d-line in the range of 1.45 to 1.55, both inclusive, and a second material having an Abbe number of not more than 10, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) of said first material and an Abbe number ( $v_d$ ) of said second material is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said first material is an amorphous polyolefin.

24. (Previously Amended) An optical material which is a mixture of materials comprising a first material having a refractive index for the d-line in the range of 1.45 to 1.55, both inclusive, and a second material having an Abbe number of not more than 10, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) of said first material and an Abbe number ( $v_d$ ) of said second material is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$



wherein said first material is an amorphous polyolefin, said second material is particles of ITO (indium-tin-oxide), and a weight ratio of said particles and said amorphous polyolefin is in the range of 44:100 to 150:100.

25. (Previously Amended) An optical material which is a mixture of materials comprising a first material having a refractive index for the d-line in the range of 1.45 to 1.55, both inclusive, and a second material having an Abbe number of not more than 10, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said first material is a copolymer of methyl methacrylate and styrene.

26. (Previously Amended) An optical material which is a mixture of materials comprising a first material having a refractive index for the d-line in the range of 1.45 to 1.55, both inclusive, and a second material having an Abbe number of not more than 10, wherein, with a predetermined ratio of mixture of said first material and second material, a relation between a refractive index for the d-line ( $n_d$ ) ~~of said first material~~ and an Abbe number ( $v_d$ ) ~~of said second material~~ is defined as follows:

$$n_d \leq -6.667 \times 10^{-3} v_d + 1.70,$$

wherein said first material is a copolymer resin of methyl methacrylate and styrene, said second material is particles of ITO (indium-tin-oxide), and a weight ratio of the particles and said copolymer resin is in the range of 43:100 to 140:100.

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Previously Amended) A method for producing an optical material, comprising a step of decreasing a filling factor of a first material, and a step of filling gaps of the first material of the decreased filling factor with a second material having an Abbe number different from that of the first material, thereby producing an optical material having a desired refractive index and an Abbe number.

33. (Original) An optical member comprising the material produced by the production method as set forth in Claim 32.

34. (Original) An optical system comprising the optical member of Claim 33.

35. (Original) The Optical system of Claim 34, wherein said optical member is a diffracting optical element.

36. (Original) An optical device comprising the optical system of Claim 34 or 35.

37-43. (Canceled)